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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :

PIERLUIGI ORESTI, ET AL. : EXAMINER: SHUMATE, ANTHONY R.

SERIAL NO: 10/594,592 :

FILED: SEPTEMBER 28, 2006 : GROUP ART UNIT: 1797

FOR: A PROCESS FOR THE

TREATMENT OF FLUIDS ORGINATING

FROM SUBMARINE OIL FIELDS

APPEAL BRIEF

COMMISSIONER FOR PATENTS ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal of the rejection of Claims 15-28 in the Official Action of March 3, 2010. A Notice of Appeal was timely filed on September 2, 2010, with three extensions of time. This Appeal Brief is timely filed on November 5, 2010, with one extension of time.

I. REAL PARTY IN INTEREST

The assignee, Saipem S. P.A. (hereinafter Appellant), having a place of business at Via Martiri Di Cefalonia 67, San Donato Milanese-Milano, Italy, is the real party in interest by way of assignment recorded in the United States Patent and Trademark Office at reel 019528, frame 0315.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's legal representative, and the assignee are not aware of any prior pending appeals, interferences, or judicial proceedings that my be related to, directly effect or be directly effected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 15-28 are presently active in this case. Claims 1-14 have been canceled. Claims 15-28 are presently rejected under 35 U.S.C. § 103(a) and are appealed. Claim 25 is also rejected under 35 U.S.C. § 112, ¶2 and 35 U.S.C. §101. The attached Appendix VIII includes a clean copy of claims 15-28.

IV. STATUS OF THE AMENDMENTS

No Amendment was filed subsequent to the last rejection mailed on March 3, 2010.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent Claim 15 recites a process for treatment of fluids originating from a submarine oil field, on board a floating unit (page 1, lines 10-16; page 8, lines 19-21).

The process includes delivering the fluid from the field to a high pressure gas/liquids separation stage, where the fluid is split into a gas phase substantially consisting of light hydrocarbon gases, and two liquid phases one of which mainly consists of water, the other substantially of hydrocarbon liquids (page 3, line 24 - page 4, line 5; page 8, line 22 - page 9, line 2; Fig. 1).

The light hydrocarbon gases are separated in the high pressure separation stage and delivered to a reinjection gas compression unit having at least two compression stages (page 4, lines 6-10; page 9, lines 14-19; Fig. 1).

After heating, the hydrocarbon liquid separated in the high pressure stage of separation is delivered to one or more further stages of gas/liquids separation operating at decreasing pressures, where, in each stage, the liquid is split into a gas phase essentially consisting of light hydrocarbon gases, and two liquid phases one of which mainly consists of water, the other mainly of hydrocarbon liquids (page 4, lines 11-19; page 9, lines 3-13; Fig. 1).

The water separated both in the first high pressure separation stage and in the decreasing pressures separation stages is delivered to a water treatment section (page 4, lines 20-23; Fig. 1).

The light hydrocarbon gases, which have been separated in the decreasing pressure separation stages, are delivered to corresponding compression units to recompress the gases (page 4, line 25 - page 5, line 3; page 9, lines 14-19; Fig. 1). Ejectors are employed to recompress gases in the compression units, and the ejectors use a compressed gas exiting from one of a plurality of compression stages of the reinjection gas compression unit as a driving fluid of each single ejector (page 5, lines 4-9; page 9, lines 20-22; Fig. 1).

Independent Claim 27 is directed to a floating production unit (page 8, lines 1-2). The production unit includes a treatment system for fluids originating from an oil field comprising a high pressure separator and at least a second lower pressure separator (page 8, lines 2-6; Fig. 1).

The production unit also includes one reinjection gas compression unit having at least two compression stages (page 8, lines 6-7; Fig. 1).

Further, the production unit includes at least a compression unit equipped with an ejector (page 8, lines 7-9).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The first ground of rejection to be considered on appeal is whether Claims 15-26 and 28 are unpatentable over <u>Sands et al.</u> (U.S. 4,778,443) in view of <u>Aarebrot et al.</u> (WO 2000/011313), <u>Holm</u> (U.S. 3,075,918), and <u>Lagrone</u> (U.S. 4,339,917) under 35 U.S.C. § 103(a).

The second ground of rejection to be considered on appeal is whether claims 15-26 and 28 are unpatentable over <u>Sands et al.</u> in view of <u>Aarebrot et al.</u>, <u>Holm, Choi et al.</u> (U.S. 6,537,349) and <u>Lagrone</u> as evidenced by <u>Webb</u> (U.S. 5,195,587) and <u>Johnston</u> (U.S. 4,967,559) under 35 U.S.C. § 103(a).

The third ground of rejection to be considered on appeal is whether claim 27 is unpatentable over <u>Sands et al.</u> in view of <u>Aarebrot et al.</u> and <u>Lagrone</u> under 35 U.S.C. § 103(a).

The fourth ground of rejection to be considered on appeal is whether claim 27 is unpatentable over <u>Sands et al.</u> in view of <u>Aarebrot et al.</u>, <u>Choi et al.</u> (U.S. 6,537,349) and <u>Lagrone</u> as evidenced by <u>Webb</u> (U.S. 5,195,587) and <u>Johnston</u> (U.S. 4,967,559) under 35 U.S.C. § 103(a).

VII. ARGUMENT

A. THE REJECTION OF CLAIMS 15-26 AND 28 AS UNPATENTABLE OVER SANDS ET AL. IN VIEW OF <u>AAREBROT ET AL.</u>, <u>HOLM</u>, AND <u>LAGRONE</u> UNDER 35 U.S.C. § 103(a).

The present invention, as set forth in independent claim 15, is directed towards a process for treatment of fluids originating from submarine oil fields. The process includes delivering fluid from the field to two or more separation stages where the fluid is split into a gas phase substantially consisting of light hydrocarbon gases and two liquid phases, one of which mainly consists of water, the other substantially of hydrocarbon liquids.

The light hydrocarbon gases are delivered to a reinjection gas compression unit having at least two compression stages. Ejectors receive the light hydrocarbon gases from each separation stage after the high pressure separation stage and use the compressed gas exiting from one of the compression stages of the reinjection gas compression unit to drive each ejector.

These include: (1) the equipment is static and thus relatively more available, (2) it requires less space, (3) it requires shorter fabrication and installation times, (4) it has lower supply, installation, and maintenance costs, and (5) it allows for control of the operating pressure of the low pressure separator which permits optimization of the process of stabilizing the exiting hydrocarbon phase (page 7).

The outstanding Office Action (i.e., the March 3, 2010 Office Action) relies on a complex combination of references to arrive at the presently claimed process. Applicant respectfully submits that it would not have been obvious to combine the four references as stated in the first ground of rejection because the addition of <u>Lagrone</u> would interfere with the purposes of <u>Aarebrot et al.</u>, there is no reason to add <u>Holm</u>, <u>Lagrone</u> is non-analogous art, and the references do not suggest using a gas exiting from a reinjection compression unit as a driving fluid for an ejector. Instead, the outstanding Office Action uses impermissible hindsight to string together the four references without consistent respect for the purpose for which each feature is reportedly added to the base <u>Sands et al.</u> reference.

The Office Action first relies at pages 7-9 on Sands et al. as disclosing the subject matter of the claim preamble, splitting the fluid from the field into a gas phase and two liquid phases, delivering water to a water treatment section, and delivering the light hydrocarbons to a gas recompression unit to compress the gases. The Office Action also acknowledges that Sands et al. does not disclose at least four elements of independent claim 15. These are: (1) delivering the light hydrocarbon gases, separated in the high pressure separation stage to a reinjection gas compression unit having at least two stages (Office Action at 7); (2) delivering after heating, the hydrocarbon liquid separated in the high pressure stage of separation to one or more further separation stages (Office Action at 8); (3) an ejector type of compressor (Office Action at 9); and (4) the compressed gas exiting from one of a plurality of compression stages of the reinjection gas compression unit serving as a driving fluid of each ejector (Office Action at 9). To find these features admittedly missing in Sands et al., the Office Action relies upon three diverse references.

At this point it should be noted that the <u>Sands et al.</u> invention was made in response "to the long-existing need for *reducing the size and weight* of the gas and petroleum production facilities in certain particular circumstances, such as those found on offshore and arctic production structures." Col. 2, lines 36-42; see also, col. 2, lines 26-28. Yet, as described below, each of the process steps missing in <u>Sands et al.</u> require adding additional structures (thus adding size and weight) in order to achieve the claimed combination according to the logic of the Office Action.

First, the Office Action turns to <u>Aarebrot et al.</u> to add the delivering of the light hydrocarbon gases separated in the high pressure separation stage to a reinjection gas compression unit having at least two separation stages. Notably, the goal of <u>Aarebrot et al.</u> is to produce power/heat on an oil installation via gas turbines and then compress the exhaust gas and reinject it into the reservoir. Page 1, lines 16-19; claim 1. <u>Aarebrot et al.</u> also seeks

to control the natural gas produced at an oil well to permit a substantial reduction of environmentally harmful gases *while also* permitting control of the formation pressure with less consumption of natural gas. Page 1, lines 22 - page 2, line 7; see also Abstract. <u>Aarebrot et al.</u> is also concerned about the increasing commercial use of gas from oil platforms, and therefore expresses concern about having *less gas* available to enhance reservoir pressure.

Page 1, lines 20-21.

Aarebrot et al. achieves these objectives by subjecting at least a part of a gas turbine exhaust gas to an afterburner to reduce O₂ levels and then compressing the recovered gas and injecting it into the reservoir. Page 1, lines 27-32. Thus, the exhaust gas of <u>Aarebrot et al.</u> has a very specific purpose and that is directed towards injection into the reservoir. Not surprisingly, since the exhaust gas of <u>Aarebrot et al.</u> is used for reinjection and desired control of reservoir pressure, there is no disclosure or suggestion in <u>Aarebrot et al.</u> to divert some of the gas exiting a compression stage to drive an ejector.

Next, the Office Action at page 8 turns to another reference, <u>Holm</u>, to disclose delivering *after heating*, the hydrocarbon separated in the high pressure stage of separation to one or more further stages of gas/liquid separation. The Office Action asserts that it would have been obvious to add heating to desorb carbon dioxide from the hydrocarbon oil as disclosed by <u>Holm</u>. The Office Action's reasoning for adding <u>Holm</u> is flawed and would be rejected by a person of ordinary skill in the art for several reasons.

Holm is directed towards a method of gas injection recovery using carbon dioxide.

Holm discloses *first actively absorbing* carbon dioxide into oil and then injecting into the reservoir an oil solution containing carbon dioxide ahead of carbon dioxide reinjection gas in order to boost oil recovery. Col. 1, lines 8-34; col. 2, lines 69-72; col. 3, lines 67-72. The

At page 28, item 13, the Office Action states that during the interview of February 23, 2010, Applicant stated that they did not have a problem with the combination of <u>Sands et al.</u> with <u>Aarebrot et al.</u> Applicant agrees that this combination was not the focus of the interview, but maintains that this combination is improper, and is particularly improper at least when further combined with the additional references of <u>Holm</u> and <u>Lagrone</u> as in the outstanding rejections.

Office Action (page 8) specifically relies on col. 2, lines 35-50 in Holm. The cited section of Holm does not relate to heating before separating hydrocarbon into gas and liquid where the separation is into two liquid phases, one of which is mainly water, as recited in claim 15. In fact, Sands et al. as modified by Aarebrot et al. does not include both liquid reinjection as well as gas reinjection, which is the reason the oil of Holm includes carbon dioxide in the first place. Moreover, the carbon dioxide in the oil of Holm is added after the gas or hydrocarbon from the reservoir is burned and then absorbed into the oil (col. 2, lines 12-35). However, burning of gas or hydrocarbon is undesirable according to Aarebrot et al. which is concerned about environmental damage and seeks to reduce the emission of harmful gases.

In addition, the combination of <u>Sands et al.</u> and <u>Aarebrot et al.</u> does not include a combustion step that *adds* carbon dioxide to be absorbed into oil in the first place and later desorbed as disclosed in <u>Holm</u>. Thus, adding the heating of <u>Holm</u> necessarily requires a combustion process, a carbon dioxide absorption process, *and* a liquid reinjection process to be added to the base combination of <u>Sands et al.</u> and <u>Aarebrot et al.</u> for the heating of <u>Holm</u> to serve the purpose relied upon by the Office Action. Since there are no combustion and liquid reinjection steps in the <u>Sands et al./Aarebrot et al.</u> combination, there would be no reason that a person of ordinary skill in the art would be taught by <u>Holm</u> to heat the hydrocarbon as recited in claim 15.

As noted above, the Office Action relies upon Holm's disclosure of heating hydrocarbons for the purpose of carbon dioxide removal so that the carbon dioxide could be reinjected into the reservoir to boost production. However, the Office Action had already relied upon and added the reinjection compression unit of Aarebrot et al. to Sands et al. for the same purpose. Thus, the addition of Holm is also redundant of Aarebrot et al., in addition to being inconsistent with Aarebrot et al. by necessarily involving an additional environmentally unfriendly combustion step, and would effectively add still more equipment

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to a base reference (Sands et al.) which has as its stated purpose the goal of reducing the weight and size of oil platforms. Accordingly, for these additional reasons, a person of ordinary skill in the art would not add both <u>Aarebrot et al.</u> and <u>Holm</u> to <u>Sands et al.</u>

In any event, there is certainly no disclosure or suggestion in <u>Holm</u> to use the gas exiting a compression stage to drive an ejector. Accordingly, <u>Holm</u> does not cure this further deficiency in the combination of <u>Sands et al.</u> and <u>Aarebrot et al.</u>

Finally, the Office Action turns far away from the field of oil recovery, particularly marine oil recovery and its associated issues, to <u>Lagrone</u> where the only specifically described application is gas turbine engines such as those used on aircraft. Col. 1, lines 12-13. <u>Lagrone</u> discloses a fuel delivery system which uses an ejector pump isolated from engine heat to improve suction capability. Col. 1, lines 39-43. More specifically, exhaust flow from a centrifugal pump is directed to an ejector to produce aspirating action of fuel for the engine. Col. 1, lines 59-61. The Office Action asserts that it would have been obvious to combine the ejector receving exhaust flow from a pump (compressor) of <u>Lagrone</u> with the system of <u>Sands et al.</u> as modified by <u>Aarebrot et al. et al.</u> and <u>Holm</u> in order to improve suction capability of a fluid delivery system. Office Action at 10.

Applicant respectfully suggest that the Office Action's additional reliance on Lagrone is improper for several reasons. First, the exhaust gases from the compressors of <u>Aarebrot et al.</u> already had a predefined and absolutely central purpose - to be reinjected into the reservoir. If these gases instead have to be redirected to an ejector unit added to the <u>Sands et al.</u> system as the Office Action asserts, then they would appear to vitiate, or at the very least hamper, the purpose of the <u>Aarebrot et al.</u> ejection gases. In other words, using the compression gas as a driving fluid from the <u>Sands et al.</u> system modified by <u>Aarebrot et al.</u> appears inconsistent with <u>Aarebrot et al.</u> and undermines the purpose of <u>Aarebrot et al.</u>, which was expressly concerned about not having enough gas available for reinjection.

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Accordingly, <u>Aarebrot et al.</u> and <u>Lagrone</u> are at odds with each other and would not be combined by a person of ordinary skill in the art.

To emphasize the importance of the <u>Aarebrot et al.</u> reference to the Office Action's rejection, the Office Action also again stated on page 29 that <u>Aarebrot et al.</u> teaches a gaseous driving fluid exiting from the last compression stage. However, as pointed out above, the "driving fluid" identified by the Examiner was destined in <u>Aarebrot et al.</u> for a very specific purpose of *reinjection into the reservoir, not driving an ejector*. Diverting the fluid to an ejector would harm the purpose of <u>Aarebrot et al.</u>

In addition, a person of ordinary skill in the art of marine oil field recovery would not look to the art of fuel delivery systems as in <u>Lagrone</u> to add the final missing element, ejectors, to the system of <u>Sands et al.</u> In an earlier Office Action of September 28, 2009, the 2009 Office Action asserted that <u>Lagrone</u> was properly considered analogous because the gas turbines disclosed could be used for applications other than aircraft. However, Applicant respectfully submits that a general statement that a technology has other uses is not an affirmative teaching or suggestion to use a particular technology in any application other than the ones expressly suggested. Further, in the outstanding Office Action of March 3, 2010, the Office Action pointed to the present claim 25 which states that the recompressed gases are used as fuel gases as evidence that <u>Lagrone</u> is analogous art. Applicant respectfully submits that the fuel gases referred to in claim 25 are a different gas than the driving fluid for the ejector and therefore claim 25 also does not support making <u>Lagrone</u> analogous art.

As a final observation, Applicant notes that the field of oil recovery is quite old and has been in existence for many decades. For example, the <u>Holm</u> patent published in 1963. As the Office Action notes with its numerous cited references, ejectors have also been used in other areas of the oil business for at least 20 years. If it was indeed obvious to add ejectors driven by compression gas to a marine oil platform as the Office Action presently asserts,

then why was it not done before? Applicant respectfully submits that the reason is simple - the claimed process was in fact not obvious, and the failure to use ejectors as presently claimed in the oil field art prior to Applicant's invention supports the non-obviousness of the invention.

In short, Applicant submits that the first rejection impermissibly picks and chooses elements from various prior art references without regard to the source or purpose for each feature and the effect that the combination of references have on one another and is based on impermissible hindsight. For all of the above reasons, Applicant submits that the first rejection must be reversed.

B. THE REJECTION OF CLAIMS 15-26 AND 28 AS UNPATENTABLE OVER SANDS ET AL. IN VIEW OF AAREBROT ET AL., HOLM, CHOI, AND LAGRONE AS EVIDENCED BY WEBB AND JOHNSTON UNDER 35 U.S.C. § 103(a).

The second ground of rejection is identical to the first ground of rejection except that it additionally relies on <u>Choi</u> for the third feature (the ejector) (Office Action at 18) that the Office Action acknowledged was missing in <u>Sands et al.</u> and as further evidenced by <u>Webb</u> and <u>Johnston</u> for the purpose of showing that it was known to use ejectors in oil field production systems (Office Action at 19-20).

However, this second ground of rejection must be reversed for the same reasons as the first ground of rejection must be reversed. In particular, the second ground of rejection still relies on the combination of <u>Sands</u>, <u>Aarebrot et al.</u>, <u>Holm</u>, and <u>Lagrone</u> which is improper for the reasons provided above with respect to the first ground of rejection.

The three additional references, especially <u>Choi</u>, at best relate to the ejector feature and do not overcome the problems described with the first rejection. In particular, <u>Choi</u>, <u>Webb</u>, and <u>Johnston</u> do not provide a basis for using the gases exiting from a compression stage as a driving fluid for each ejector. For example, <u>Choi</u> Fig. 2 simply shows an ejector 14

being used to receive gas from the high pressure 16 and low pressure 14 separators to output the gas into the exit pipeline 36. Webb (ejector used to manage vapor emissions associated with storage tanks) and Johnston (ejectors for condensing gas to atmospheric pressure - col. 4, lines 64-67) are similarly unhelpful.

Accordingly, the second rejection must be reversed for the same reasons as the first rejection.

C. THE REJECTION OF CLAIM 27 AS UNPATENTABLE OVER <u>SANDS ET AL.</u> IN VIEW OF <u>AAREBROT ET AL.</u> AND <u>LAGRONE</u> UNDER 35 U.S.C. § 103(a).

As summarized above, claim 27 is directed towards an oil platform rather than a process for treatment of a fluid.

The Office Action first relies at pages 24-25 on <u>Sands et al.</u> as disclosing the subject matter of the claim preamble, as well as high and low pressure separators, and a compression unit. The Office Action also acknowledges that <u>Sands et al.</u> does not disclose at least two elements of claim 27. These are: (1) a reinjection gas compression unit having at least two stages (Office Action at 25); and (2) a compression unit equipped with a suitable ejector (Office Action at 25).

Once again, the Office Action relies on <u>Aarebrot et al.</u> to add the reinjection gas compression unit and <u>Lagrone</u> to add the ejector to the system of <u>Sands et al.</u> This combination once again fails for the same reasons as with respect to the first ground of rejection, especially that it would not be obvious to a person of ordinary skill in the art to look to <u>Lagrone</u> to add an ejector to the compression unit of <u>Aarebrot et al.</u> when the compressed gas of <u>Aarebrot et al.</u> is already destined for reinjection back into the oil field.

Accordingly, the third ground of rejection must also be reversed for reasons similar to the first ground of rejection.

D. THE REJECTION OF CLAIM 27 AS UNPATENTABLE OVER <u>SANDS ET AL.</u> IN VIEW OF <u>AAREBROT ET AL.</u>, <u>CHOI</u>, AND <u>LAGRONE</u> AS EVIDENCED BY <u>WEBB</u> AND <u>JOHNSTON</u> UNDER 35 U.S.C. § 103(a).

The fourth ground of rejection is identical to the third ground of rejection except that it additionally relies on <u>Choi</u> for the second feature (the ejector) (Office Action at 27) that the Office Action acknowledged was missing in <u>Sands et al.</u> and as further evidenced by <u>Webb</u> and <u>Johnston</u> for the purpose of showing that it was known to use ejectors in oil field production systems (Office Action at 27-28).

However, the fourth ground of rejection must be reversed for the same reasons as the third ground of rejection must be reversed. In particular, the second ground of rejection still relies on the combination of <u>Sands</u>, <u>Aarebrot et al.</u>, <u>Holm</u>, and <u>Lagrone</u> which is improper for the reasons provided above with respect to the first ground of rejection. The three additional references also do not overcome the problems described with the first rejection as discussed above with respect to the second rejection.

Accordingly, the fourth ground of rejection must be reversed for the same reasons as the third rejection.

E. CONCLUSION

For the above reasons, Applicant submits that the first through fourth grounds of rejection should be reversed.²

² Applicant notes that the March 3, 2010 Office Action also rejected dependent claim 25 under 35 U.S.C. §§ 101 and 112, ¶2. Office Action at 6. Should prosecution be reopened, Applicant intends to amend claim 25 to overcome these rejections. Applicant further notes that the March 2, 2010 Office Action at page 2, item 4, also objected to the phrase "compression units ejectors" in claim 15 as grammatically incorrect. Applicant respectfully disagrees with the Office Action and submits that the phrase is grammatically correct because the phrase refers to the fact that in the previously recited plural compression units, ejectors are employed.

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Respectfully submitted,

OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT, L.L.P.

Customer Number 22850

Tel: (703) 413-3000 Fax: (703) 413 -2220 (OSMMN 07/09) Gregory J. Maier Attorney of Record Registration No. 25,599

Andrew M. Ollis Registration No. 40,749

VIII. CLAIMS APPENDIX

1-14. (Canceled)

15. (Appealed) A process for treatment of fluid originating from a submarine oil field, performed on board of a floating unit, comprising:

delivering the fluid from the field to a high pressure gas/liquids separation stage, where the fluid is split into a gas phase substantially consisting of light hydrocarbon gases, and two liquid phases one of which mainly consists of water, the other substantially of hydrocarbon liquids;

delivering the light hydrocarbon gases, separated in the high pressure separation stage, to a reinjection gas compression unit having at least two compression stages;

delivering, after heating, the hydrocarbon liquid separated in the high pressure stage of separation to one or more further stages of gas/liquids separation operating at decreasing pressures, where, in each stage, the liquid is split into a gas phase essentially consisting of light hydrocarbon gases, and two liquid phases one of which mainly consists of water, the other mainly of hydrocarbon liquids;

delivering to a water treatment section the water separated both in the first high pressure separation stage and in the decreasing pressures separation stages;

delivering the light hydrocarbon gases, which have been separated in the decreasing pressure separation stages to corresponding compression units to recompress the gases, wherein to recompress gases in the compression units ejectors are employed, which use a compressed gas exiting from one of a plurality of compression stages of the reinjection gas

compression unit as a driving fluid of each single ejector.

- 16. (Appealed) The process according to claim 15, wherein the driving fluid of each single ejector is the compressed gas exiting from a second-last or from a last compression stage of the reinjection gas compression unit.
- 17. (Appealed) The process according to claim 15, wherein the further decreasing pressure gas/liquids separation stages are in number of two, one at intermediate pressure and one at lower pressure.
- 18. (Appealed) The process according to claim 17, wherein the driving fluid of the ejector of the compression unit of the hydrocarbon gas separated in the intermediate pressure stage is the compressed gas exiting from the last stage of the reinjection gas compression unit.
- 19. (Appealed) The process according to claim 17, wherein the driving fluid of the ejector of the compression unit of the hydrocarbon gas separated in the lower pressure stage is the compressed gas exiting from the last stage of the reinjection gas compression unit.
- 20. (Appealed) The process according to claim 15, wherein each stage of compression of the reinjection gas compression unit comprises at least a biphasic separator to remove liquid particles, a compressor, and a heat exchanger to cool the compressed gas.
 - 21. (Appealed) The process according to claim 20, wherein the compressed gas to

be used as driving fluid is taken after the compressor.

- 22. (Appealed) The process according to claim 21, wherein the compressed gas to be used as driving fluid is taken after the compressor and before the cooling heat exchanger.
- 23. (Appealed) The process according to claim 19, wherein the reinjection gas compression unit includes three compression stages.
- 24. (Appealed) The process according to claim 15, wherein a last stage of separation at decreasing pressures is performed at sub-atmospheric pressure.
- 25. (Appealed) The process according to claim 15, wherein the recompressed gases exiting from the compression units are used as fuel gases.
- 26. (Appealed) The process according to claim 15, wherein the recompressed gases exiting the compression units are sent to the reinjection gas compression unit.
 - 27. (Appealed) A floating production unit comprising:

a treatment system for fluids originating from an oil field comprising a high pressure separator and at least a second lower pressure separator;

one reinjection gas compression unit having at least two compression stages; and at least a compression unit equipped with a suitable ejector.

28. (Appealed) The process according to claim 15, performed in a floating production unit.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.